

siliceous skeleton is secreted, which forms, as in the different groups of the typical Radiolaria, very varied and delicate structures, usually radiating outwards in hollow siliceous tubes.

N. M.

NOTES

THE German Chemical Society in entering upon its thirteenth year has elected as president Prof. H. Kopp, of Heidelberg, who for some time past has devoted himself almost exclusively to the chronicling of the history of chemistry. At the same time Prof. Roscoe, of Manchester, and Prof. Marignac, of Geneva, who was compelled a year since by advanced age to relinquish active professorial duties, were elected to honorary membership. The Society now numbers 2,086, of whom 14 are honorary members and about 200 resident at Berlin. The *Berichte* of the Society, now certainly the most important chemical periodical of the day, forms for the past year a volume of over 2,550 pages containing over 600 communications. An exhaustive index of the first ten years is now in the press, and will soon be ready. The already bulky dimensions of the *Berichte*, with its constant yearly increase in size, have forced the council of the Society to propose an increase in the membership fee, which instead of 15s. shall be raised to 20s. annually. The fact that the Society can cover its ordinary expenses and send post free to its members in all parts of the world a periodical of the size above mentioned for so modest an annual fee, affords an interesting glimpse into the comparative cost of scientific association and activity in Germany and in our own country, where the expenses of membership in most of the scientific societies often exclude those in limited circumstances.

DR. JOSEPH LEIDY, Professor of Anatomy in the University of Pennsylvania, at Philadelphia, has just been awarded by the Council of the Society of Natural History, Boston, Mass., the great Walker prize, for the value of his researches in natural history. This prize is given once in five years, at the discretion of the Council, to the naturalist whom it shall decide to have performed the most elaborate and original work during that time. This prize has been awarded but once previously—five years ago—to Prof. Alexander Agassiz, of Cambridge. It is usually the sum of \$500, but on account of the extraordinary merit of Dr. Leidy's researches the Council increased the sum to \$1,000. Dr. Leidy was for a long time connected with the Geological Survey of the Territories, and one of his most important memoirs, vol. xii. of the final Reports, has just been issued by the Government. In collecting the materials for the volume, Dr. Leidy spent two seasons in the Western Territories under the auspices of the Survey.

THE following arrangements have just been made at the Royal Institution for the lectures after Easter. Tuesdays:—Prof. Huxley—Two Lectures on Dogs, and the Problems connected with them; Mr. Robert H. Scott, F.R.S.—Four Lectures on Wind and Weather; Mr. John Fiske—Three Lectures on American Political Ideas from the Standpoint of Universal History. Thursdays:—Prof. Tyndall—Six Lectures on Light as a Mode of Motion; Mr. T. W. Rhys Davids—Three Lectures on the Sacred Books of the Early Buddhists. Saturdays:—Mr. James Sully—Three Lectures on Art and Vision; Prof. Henry Morley—Five Lectures on the Dramatists before Shakespeare, from the Origin of the English Drama, to the year of the Death of Marlowe (1593). The Friday Evening Meetings will be resumed on April 9—Prof. Huxley on the Coming of Age of the "Origin of Species." Succeeding discourses will probably be given by M. Ernest Renan, Mr. W. H. Pollock, Mr. W. Spottiswoode, Mr. G. J. Romanes, Lord Reay, Mr. H. H. Statham, and Mr. Francis Hueffer.

DR. C. W. SIEMENS was elected last month a Foreign Member of the Royal Academy of Sciences of Stockholm.

WE are glad to see that a movement has been set on foot for a testimonial to Dr. Farr as a mark of appreciation of the value of his statistical labours. The preliminary list of the committee is headed by the name of the Earl of Derby.

THE death is announced, on February 3, of Chintamanay Ragoo-natha Charry, F.R.A.S., Head Assistant in the Madras Observatory for the last seventeen years. Attached to that institution for a period of over thirty-five years, he served in succession, in every grade, under the late Major W. S. Jacob, Col. W. K. Worster, Col. J. F. Tennant, R.E., and the present astronomer, and won the esteem and regard of each, by his intelligence, assiduity, and attachment to the pursuit he had adopted. His strict honesty and ready skill as an observer, combined with accuracy and speed in computation, and a fair and useful amount of self-acquired mathematical knowledge, rendered him, until disabled by impaired health, invaluable in the observatory; and the chief share in the Catalogue of Stars in hand, with the Transit Circle, since 1862, comprising already over 38,000 separate observations, is due to his personal exertions; besides many other special researches of a nature not often undertaken by ordinary assistants in observatories. He contributed several papers to the Royal Astronomical Society of London, and was elected a Fellow in January, 1872. He was twice successfully engaged in observations of total eclipses of the sun; on the first occasion in August, 1868, at Vunpurny, in the Nizam's Dominions, in independent charge of a branch expedition for the purpose; and on the second, in December, 1871, at Avena hy, in the Coimbatore district. He was the first and only native of India who has yet entered the lists as a discoverer of new celestial objects, having detected two new variable stars, viz., R. Reticuli in 1867, and V. Cephei in 1878. He latterly took great interest in delivering public lectures on astronomy, with a view to enlighten his countrymen upon the subject, and to convince them of the absurdity of their notions in regard to celestial phenomena, by familiar explanations, in simple terms, of the true principles of the science, as opposed to the ignorant superstitions and rough predictions of Hindoo astrologers and empirics of the old school.

THE French papers, the *Gardeners' Chronicle* informs us, announce the death of Dr. Boisduval, to whose labours we owe one of the best treatises on the insects which affect garden plants. Dr. Boisduval was an ardent horticulturist, and a leading man for some time at the Central Horticultural Society of France. He died in his eighty-second year.

THE death is announced of Dr. Wilibald Artus, Professor of Philosophy at Jena, on February 7 last, aged seventy years. Also of Dr. Franz Xaver von Hlubek, Professor of Agriculture at the Graz Joanneum, on February 10, aged seventy eight years. In the third week of February also died Herr Adolf Müller, one of the directors of the well-known Geographical Institute of Justus Perthes at Gotha.

A MONUMENT to Dr. August Petermann, the well-known geographer, has just been erected at Gotha. The design, which is very tasteful, is by Herr Eelbo, and the work was executed by the eminent sculptor, Herr Deutschmann.

A NUMBER of former pupils of Bernhard von Cotta propose to erect a monument in memory of the deceased geologist, and invite subscriptions for this purpose. The Royal Berg-Academie at Freiberg will receive contributions.

DURING Napoleon's rule the number of French astronomical observatories was increased to four, viz., Paris, Toulouse, Marseilles, and the Meudon Physical Observatory of Astronomy. The

present Government has created three new establishments—Lyons, Besançon, and Bordeaux, and M. Bischofsheim, the liberal banker, one at Nice. Among the high region meteorological observations Clermont-Ferrand could be used for astronomy if fitted with instruments and garrisoned by observers. The organisation of French astronomy has been completed by the creation of a school of astronomy at the Paris Observatory by Admiral Mouchez, who had already organised a school of astronomy for navy officers at Montsouris. The course of studies, whose duration is two years, was recently opened; the first year will be occupied in learning exclusively the meridian service, and the second the equatorial service, as well as general physics. The experiments connected with the physical department will take place at the Sorbonne, in the laboratories, as well as at the observatory. Four pupils have been selected by the director for the first promotion. They will have a salary of 1,800 francs a year, with lodgings in the buildings of the Observatory. After having successfully passed their examinations, they will be appointed assistant-astronomers in one of the government observatories. By a singular exception to the rules of the competition principles they are not appointed after an examination, but selected by the director of the public observatory from the Normal School, Polytechnic School, and Licenciés-Sciences mathématiques. They must not be more than twenty-five years of age when nominated. In addition to the Government pupils two more are trained at the expense of M. Bischofsheim, for his Nice observatory, and three others have been authorised to follow the course of lectures and applications after having proved their ability. Similar authorisations may be granted every year on application. Meridian service will be taught by Admiral Mouchez, M. Loewy, M. Perigaud, astronomer, and M. Gaillot, head of the Bureau des Calculs.

THE American Academy of Arts and Sciences intends to celebrate its 100th anniversary on May 26.

THE Easter Monday and Tuesday excursion of the Geologists' Association will be to South Hampshire, with Christchurch as a centre.

THE following statistics in connection with the termination of the St. Gotthard tunnel will be of interest to our readers:—The total length of the tunnel is 14,920 metres, or 112 feet more than 9½ miles. Its width is 6½ metres, or 21½ feet. The undertaking has required for its execution seven years and five months—four and a half years less than the time taken to complete the Mont Cenis tunnel. The average daily progress was 5½ metres or 18 feet. The number of holes bored amounted to 320,000, and 490,000 kilogrammes of dynamite were used in blasting. 1,650,000 drills were consumed and 1,450,000 cartloads of debris were taken out from the bowels of the mountain.

THE phylloxera has appeared in Sicily in the province of Caltanissetta.

RADICAL remedies are now being adopted in France with a view of exterminating the phylloxera. The Government proposes to spend the sum of 2,400,000 francs (96,000/.) for inundating 7,000 hectares of vineyards in the Departments L'Aude and L'Hérault.

THE earthquakes in San Salvador, viz., in the capital and the cities in the vicinity of Lake Ilopango, seem to have lasted from December 21 until January 10. A violent shock on December 27 destroyed a number of villages near Lakes Ilopango and Zollapango, some fifteen miles from the capital. A violent shock was again felt on January 1, particularly in the port of La Libertad. The city of San Salvador is stated to be quite deserted by the population. News dated February 5 report earthquakes from Cuba and from various parts of Mexico, particularly from the districts of Cordoba, Orizaba, Tehuacan, and Veracruz. A

violent earthquake occurred on February 9 at Kaposvar and other localities of the Somogy County (Hungary) shortly before midnight. A moderate shock of earthquake, proceeding in the direction from south to north, was felt in Lower Carniola in several places, such as Gradaž and Rudolfswerth, on February 12, at 5.15 p.m.

A FEW days since the *Bulletin* of the French Bureau Central of Meteorology published for the first time the daily telegrams sent from Briançon meteorological observatory, whose altitude is 1,300 metres, 300 more than the summit of Puy de Dôme. At present the French high region stations are three in number, Briançon, Puy de Dôme, and Pic du Midi. A fourth is being fitted on the new German frontier, which will complete the system.

DR. KIENITZ-GERLOFF, of Weilberg, writes to inform botanists that henceforth he is charged, in place of Herr Limpicht, with the account of bryology for the *Botanische Jahressbericht*, edited by Herr Just. He begs bryologists to favour him by transmitting their papers.

IN connection with the Commission which has been organised in Switzerland for the investigation of earthquakes, to which we referred in a recent article, Prof. Heim, of Zurich, publishes a little brochure, on "Les Tremblements de Terre et leur Étude scientifique," in which he reviews existing facts and theories, gives instructions for the observation of earthquakes, and describes the organisation of the Swiss Commission.

NO. 3 of the *Proceedings* of the Birmingham Philosophical Society contains a number of papers of considerable interest. Dr. Richard Norris has an elaborate contribution, illustrated with many photographs, "On the Existence in Mammalian Blood of a New Morphological Element which explains the Origin of the Red Disk and the Formation of Fibre"; Mr. Lawson Tait describes the researches on the Digestive Principles of Plants; and Prof. Bonney contributes a paper on the pre-Cambrian Rocks of Great Britain.

THE following papers were read yesterday at the half-yearly general meeting of the Scottish Meteorological Society:—1. Report from the Council of the Society. 2. The Velocity of the Wind at different Heights above the Ground, by Thomas Stevenson, Honorary Secretary. 3. The Storm of December 28, 1879, by Alexander Buchan, Secretary. 4. The Influence of the recent Fog on the Health of London, by Dr. Arthur Mitchell. 5. Thunderstorms in Scotland, their Diurnal Periods, by Alexander Buchan.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mrs. S. M. Young; a Malbrouck Monkey (*Cercopithecus cynosurus*) from West Africa, presented by Lady Dorothy Nevill; two Wild Boars (*Sus scrofa*) from India, presented by H.R.H. the Prince of Wales, K.G.; a Crab-eating Opossum (*Didelphys cancrivora*) from St. Vincent, W.I., presented by Mr. Geo. Dundas; a Leadbeater's Cockatoo (*Cacatua leadbeateri*) from Australia, presented by Mr. J. Veale; a Greater Sulphur-crested Cockatoo (*Cacatua galerita*) from Australia, presented by Mr. T. Phillips; a Herring Gull (*Larus argentatus*), European, presented by Mr. H. D. Martin; a Macaque Monkey (*Macacus cynomolgus*) from India, a Crab-eating Raccoon (*Procyon cancrivorus*) from Baranquilla, two Wild Cats (*Felis catus*) from Spain, a Ring-tailed Coati (*Nasua rufa*), a Harpy Eagle (*Thrasaetus harpyia*) from South America, deposited; a Harnessed Antelope (*Tragelaphus scriptus*) from West Africa, purchased; a Red Kangaroo (*Macropus rufus*), a Gaimard's Rat-Kangaroo (*Hypsiprymnus gaimardi*), born in the Gardens.